

# V-22 OSPREY TILTROTOR HYDRAULIC MANIFOLD

## COMPONENT PURPOSE/REQMTS:

- This is part of the subsystem that redirects high pressure hydraulic fluid to flight control surfaces. The component is subjected to high mean stresses (up to 70 MPa) and alternating stresses at temperatures up to 100°C, and must also have good compatibility with hydraulic fluid.

## SELECTION CRITERIA:

- high specific stiffness and strength
- good static and fatigue strength
- affordable near net shape processing

## MATERIAL:

- Al 2009/SiC/15w P/M machined from extrusion
- previous material was 7050 Al, which failed frequently in service

## BENEFITS:

- significant improvement in flight performance relative to initial material specified— no failures



*A lower-cost infiltration cast approach of particulate-reinforced DRA developed by Triton Systems, Inc. is awaiting certification testing by Bell Helicopter (shown above).*